

Applic. No.: 10/651,856

Amdt. Dated January 6, 2006

Reply to Office action of October 6, 2005

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-29, 31-38, and 40-41 remain in the application.

Claims 1, 24, 31, 33, and 40 have been amended. Claims 30 and 39 have been previously cancelled. Method claims 1-23 have been previously withdrawn and rejoinder of these claims has been requested.

In the section entitled "Claim Rejections - 35 USC § 103" on pages 2-9 of the above-mentioned Office action, claims 24-29 and 31-41 have been rejected as being unpatentable over Jiang et al. (US 6,515,355 B1) in view of Takeuchi et al. (US 6,548,598 B2) under 35 U.S.C. § 103(a).

The rejection has been noted and claims 1, 24, 31, 33, and 40 have been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found on page 3, lines 2-4 of the specification.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 24, 31, 33, and 40 call for, inter alia:

said first plastic layer having a bead of plastic compound of said first plastic layer surrounding the marginal sides of the semiconductor chip;

...

said wiring structure having through-contacts connecting to contact regions of the semiconductor chip and to external contacts of the electronic component.

The language of the claims of the instant application has been modified to clarify that the "bead" of the invention of the instant application refers to a form of the first plastic layer rather than to an additional bead such as a glass filler bead, which has been added to the first plastic layer. Also, it is clarified that the wiring structure has through contacts that are connected to contact regions of the semiconductor chip and to external contacts of the electronic component because the Examiner appears to have interpreted the language "said wiring structure having through-contacts between contact regions of the semiconductor chip and external contacts of the electronic component" to include any through contacts positioned between the contact regions of the semiconductor chip and external contacts of the electronic component.

The provision of two plastic layers in the electronic component according to the invention of the instant application enables an improved encapsulation of the semiconductor chip and improves the reliability of the

component since the bead provided in the first plastic layer provides a form-locking engagement with the second plastic layer. The two plastic layers also enable the wiring structure to be positioned on the surface of the second plastic layer. The provision of through-holes to the chip contact regions reduces the length of the conductor path and improves the functionality of the device.

Jiang et al. fail to teach an electronic component in which the wiring structure includes thorough contacts to contact regions of the semiconductor chip. Jiang et al. teach an electronic component in which the chip contact pads are connected by wire bonds to a substrate.

Jiang et al. provide no motivation for a person skilled in the art to modify the electronic component by omitting the bond wires and provide no incentive to provide a wiring structure which includes through contacts to the chip contact regions.

Takeuchi et al. teach a thermoplastic resin composition which may include a filler which can include glass beads. Takeuchi et al. fail to teach a bead which includes the plastic compound of the first plastic layer and fail to teach a bead which surrounds, or is capable of surrounding, a semiconductor chip.

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It is also not obvious from Takeuchi et al. to provide a bead including the material of the plastic compound in which it is disposed because Takeuchi et al. teach additives, which may include fillers such as glass beads. Takeuchi et al., therefore, provide no reason for a person skilled in the art to provide a bead including the material in which it is disposed since this is not an additive.

It is also not obvious from Takeuchi et al. to provide a first plastic layer having a bead of plastic compound of the first plastic layer, which surrounds the marginal sides of the semiconductor chip, because fillers include small beads that are embedded in a host material.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 24, 31, 33, and 40. Claims 24, 31, 33, and 40 are, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claims 24 and 33, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 24-29, 31-38, and 40-41 are solicited. Rejoinder of method claims 1-23 is requested upon allowance of product

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claims 9-15 under MPEP 821.04 ("if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined").

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to 37 CFR Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

Yonghong Chen  
Reg. No. 56,150

  
For Applicant

YC

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Lerner and Greenberg, P.A.  
Post Office Box 2480  
Hollywood, FL 33022-2480  
Tel: (954) 925-1100  
Fax: (954) 925-1101